Spheres of Influence

rganic foods aren't just for health food stores anymore. Increasingly, these products are cropping up in all types of grocery and food stores. The market for organic foods is booming, having grown more than 40-fold from 1986 to 1996. The Organic Trade Association (OTA), a trade group based in Greenfield, Massachusetts that represents more than 900 members involved in the production and sale of certified organic products, estimates that the organic food industry is worth \$4.2 billion annually, and will

expand at a rate of more than 24% pyear. The growing llemand for organifoods can be attributed to factors such as concern about environmental protection, fear about food safety, and an increasing awareness of potential links between adverse health effects and chemical exposures such as pesticide residues.

While consumers have increasing organic options, there are currently no consistent requirements for organic labeling and no guarantee that foods labeled as organic are actually grown and processed in a purely

organic fashion. Organic, by definition refers to foods that are grown and processes without the use of synthetic chemicals of pesticides. However, with the introduction of new technologies such as genetic engineering, debate has arisen about what role these technologies should play in organic food production, and whether the products of these technologies should be considered natural or synthetic.

These are among the issues that the United States Department of Agriculture (USDA) is trying to hammer out in a

proposed rule on organic foods. The USDA's Agricultural Marketing Service is working on the development of the National Organic Program (NOP), which was mandated by the Organic Foods Production Act of 1990 under its requirement for the establishment of national standards governing the marketing of agricultural products as having been organically produced.

There are currently 11 state and 33 private organic certification entities. About half of all states have regulations regarding the labeling of organic products, but there is no interstate regulatory authority and the standards vary among states. The 1990 act grew out of pressure from organic farmers and consumers who wanted Congress to establish a national program to ensure that foods labeled organic meet consistent standards.

"People still see significant benefits in having a national program," says Katherine DiMatteo, executive director of the OTA, "[but] today there is doubt about the program because it is taking so long [to develop]." To complicate matters, when the first draft of the proposed rule was released, an unprecedented public outcry arose in opposition to many of the rule's stipulations.

The Proposed Rule

The Organic Foods Production Act called for the establishment of the National Organic Standards Board (NOSB) to assist the secretary of agriculture in the development of national standards. The board, first appointed in 1992, now comprises four farmers and growers, two handlers and processors, one retailer, one scientist, three consumer and public interest advocates, and three environmentalists from across the United States. A fifteenth board member representing certifying

agents will be appointed once national standards are in place. The board will assist in the implementation of the rule and any future revisions to program regulations.

In 1996, the NOSB submitted a list of recommendations to the USDA. The USDA reviewed these recommendations, developed a proposed rule, and released it for public comment on 16 December 1997. In the proposed rule, organic products were defined as "agricultural products produced through a natural versus

synthetic process." The proposed rule outlined regulations that would govern the NOP and the allowable methods, practices, and substances to be used in producing and handling crops, livestock, and their processed products.

The USDA announced its plan to certify the systems used to produce and handle organic products, rather than certifying the products themselves. The activities involved in certifying operations would be conducted by state and private certifying agents accredited by the USDA. To become accredited, stated the proposed rule, operations would have to demonstrate that their personnel have the capability and experience to carry out the certification program. The USDA would conduct site evaluations to review the performance of the certifying agents.

The comment period was extended once at the request of the NOSB. By its close on 30 April 1998, the USDA had received more than 275,000 comments. "This was the largest number of comments the USDA has ever gotten on a proposed rule," says Keith Jones, director of the NOP. Much of the response was sent via e-mail.

A vast majority of the comments opposed portions of the rule. One of the major criticisms of the rule was that it ignored the recommendations of the NOSB. "The proposed rule was so shockingly different from what the board recommended," says DiMatteo. Enrique Figueroa, administrator for the Agricultural Marketing Service, says, however, that the rule did include many of the board's recommendations, but that some portions were "not followed to a tee."

The majority of the comments also opposed three practices in particular that were included in the proposed rule. The "big three," as they've been dubbed,

include the use of irradiation, genetically modified organisms, and biosolids, or sewage sludge, in organic farming. Jones says the USDA had not taken a position on these three practices and included them in the rule in order to draw public comments to determine whether they were suitable for organic farming.

The Big Three

Irradiation is the process of subjecting foods to ionizing radiation to kill microorganisms. In a press release announcing its stance on the proposed rule, the OTA said, "Food irradiation (ionizing radiation) is a synthetic process that has never been allowed in organic production. The long-term effects of irradiation are still unknown, and irradiation is not a panacea to food safety concerns."

In response to the proposal to use bioengineered organisms, the OTA stated that "the use of genetically engineered organisms is an unproven technology that the organic system does not need in order to grow high quality and nutritious food. There is not enough scientific data documenting the long-term impact genetically engineered organisms will have on the environment or human health."

About the process of using sewage sludge to fertilize organic crops, the OTA said, "Sewage sludge from municipalities' waste may contain heavy metals and toxins and, therefore, is not appropriate for use on land where food is to be grown for human consumption. The use of sludge has never been allowed in organic food production and is completely unnecessary." DiMatteo explains that sewage sludge contains not just human waste, but any substance that is washed down the drains of households and corporations.

Adam Sharp, director of agricultural chemicals, biotechnology, and air quality at the American Farm Bureau Federation, based in Washington, DC, says that while the federation agrees that these three practices should not be allowed in organic farming, none of them have been shown to be unsafe. Sharp adds that all three practices are beneficial in conventional farming. Irradiation, he says, "helps safe food become more safe." Biotechnology helps



farmers produce higher yields on existing lands and also reduces runoff and pollution, he says, and sludge is a nutrient resource that can be beneficial and safe if used properly.

The OTA also criticized the section of the rule addressing livestock, saying it gave too much leeway in the amount of nonorganic livestock feed, types of living conditions, and use of antibiotics and other animal drugs allowed in organic production. For example, the proposed rule said that up to 20% of the total livestock feed ration in a given year may not be organically produced. According to the OTA, the organic industry expects the regulations to call for the use of 100% organic feed.

Furthermore, the OTA said, the rule did not adequately address historic land use. Although the act states that farms should be free from the use of prohibited substances such as pesticides and other synthetic materials that are not suitable for organic farming for three years in order to be certified suitable for organic farming, the OTA says that the soil of some land is so contaminated that even after three years it may not be appropriate for organic production. "The rule didn't address other circumstances that need to be taken into consideration," says DiMatteo. For example, she says, land used for chemical manufacturing or mining operations may still contain high quantities of substances such as persistent organic pollutants and heavy metals. In addition, DiMatteo says the historic use of land should dictate the type of crops grown there. Certain types of vegetables absorb pollutants from soil at a higher rate than others. For example, squash and cucumber plants absorb higher rates of DDT than other vegetables.

The Rewrite

Because of the massive public outcry, the USDA decided to rewrite the proposed rule. "The fact that this rule was reproposed is unusual for any federal regulation," says Figueroa. USDA officials say they are working to develop a final rule that will satisfy the organic community. "We have been respondent to the NOSB's recommendations, and our reproposed rule will reflect [that]," Figueroa says. "The [final] rule will be a rule that the organic community can embrace."

On 8 May 1998, in the first visible step toward revising the rule, Secretary of Agriculture Dan Glickman announced that the USDA would exclude the big three from the final regulation. Then, on 22 July 1998, Glickman announced at an NOSB meeting that the final rule will not allow the use of synthetic materials that

have not been approved by the NOSB in organic production.

While continuing to solicit public input, the USDA released three issue papers on 28 October 1998 for public comment through 14 December 1998. The first paper discussed livestock confinement, outlining various options as to how the USDA could address the issue. Commenters on the first proposed rule had expressed concern over a passage in the rule that read, "If necessary, livestock may be maintained under conditions that restrict the available space for movement or access to the outside;" they felt this language offered a loophole for factory farming. The NOSB's original recommendation had stated that animal confinement may be justified in the case of inclement weather, or when indicated for the health, care, safety, and wellbeing of livestock, or the protection of soil and water quality.

The OTA supports that recommendation, stating, "Certified organic livestock farms shall be based on a system of agriculture that incorporates access to the outdoors, direct sunlight, and managed pasture for ruminant animals. Any exceptions to this requirement must be temporary and justified in the farm plan." The issue paper sought input on how the section should be rewritten and how to define terms such as "access to pasture."

The second issue paper discussed the use of antibiotics and parasiticides in livestock production. The USDA sought input on whether the use of such products should be absolutely prohibited or restricted to the treatment of health problems. The NOSB recommendations had called for prohibition of the use of antibiotics and parasiticides except under certain clearly delineated animal health conditions; many commenters advocated absolute prohibition.

The third issue paper addressed the termination of certification of private certifiers who violate the organics rule. The proposed rule stated that "if a certifying agent had reason to believe that a certified operation had violated the Act, the certifying agent would recommend that USDA terminate certification. After review of the recommendation, the Administrator of the Agricultural Marketing Service could institute proceedings to terminate certification." Many respondents to the first rule said that this proposed process would be unduly bureaucratic and would complicate local certifiers' efforts to ensure the integrity of the organic label. The NOSB had not made a recommendation on this issue.

More than 10,000 comments were received by the USDA on the issue papers. The NOP is reviewing the comments and

will consider the responses in drafting the final rule, says Jones.

Impact

The USDA announced on 14 January 1999 that for the first time, certain meat and poultry products can be labeled as certified organic if processors seek prior label approval from the USDA's Food Safety and Inspection Service and if the claim meets certain criteria. Processors will have to show that the products have been certified as organic by a certification entity. Once the final organic rule is passed, the products will have to meet its standards. According to Beth Gaston, a spokesperson for the Food Safety and Inspection Service, Glickman decided to go ahead and implement the new policy before the rule was finalized, "because the rule-making process takes time, and in the meantime, [the policy] allows consumers a choice.

Joe Smillie, senior vice president at Quality Assurance International, one of the largest private and professional certifiers of organic foods, fibers, and food products in North America, sees the implementation of the policy as a positive sign from the USDA to the organic industry. "I think it's a show of good faith toward the industry. [The USDA] lost so much credibility with that first proposed rule," Smillie says.

Once finalized, the national organic standards will give customers consistent quality assurance for organic foods, and many experts believe that the standards will contribute to the expansion of the market for organic foods. Because of the differences in regulations between states and certification entities, Jones says, "The free flow of trade is not occurring like it would be if there was one consistent standard across the country."

"One of the barriers now is that it's not really clear in every state as to what qualifies as organic and what doesn't," says DiMatteo. "Currently, the playing field is not level. Those who pay certification fees and are following the rules are competing with those who don't. [The rule] will create a level playing field for all producers.' According to DiMatteo, for a segment of farmers considering organic farming, consistent standards may also be the encouragement to switch from traditional growing methods to organic. "The confidence that the consumer will bring to the market will create opportunities for farmers that they may not have in the current market," she says.

Figueroa agrees, saying, "Clearly, [the standards] will lead to expansion not only in the domestic market, but significantly in the international market." For example, the

European Union may be more likely to accept products that have met a U.S. government standard rather than disparate certification entities' standards.

The recently passed policy on meat labeling also has the potential to contribute to the expansion of the organic market. Many existing organic beef and poultry producers have not had their operations certified because they could not label their products as organic. Smillie predicts that now that the organic claim can be made, many operations will become certified. This will in turn increase the need for organic livestock feed, providing an economic incentive to corn and soybean growers to adopt organic practices.

While the organic industry stands to benefit from the passage of the final rule,

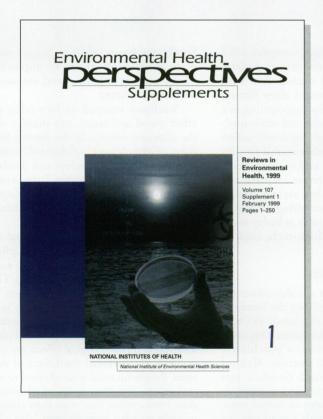
traditional farmers want to ensure that organic products are not viewed as safer or healthier than other products as a result of the rule. Sharp says that the organic label is a marketing tool that helps growers sell products to the segment of consumers who prefer to buy organic. He says the American Farm Bureau Association has several organic members, and that the organization supports organic farming. "It's a growing market and it does have opportunities," he says. "At the same time, we believe that conventionally grown products shouldn't be promoted as less safe or less healthy than organic." He says there is no research to support claims that organic foods are healthier or safer than conventionally grown foods. Says Jones, "This is a market niche and a production claim. [The label] makes no health

claims and no food safety claims."

USDA officials say they are working to finalize the rule as soon as possible. According to Jones, the reproposed rule may be released this year. There will be a public comment period, but the length of that period has not yet been decided. Following the comment period, the rule will be revised as necessary and sent to Congress, which has 60 days to object to the final rule. If no objection is made, the rule will go into effect shortly thereafter. Figueroa says there is generally some lag time between approval and implementation, but adds, "We're trying to think ahead so that when the rule becomes effective, it's ready to go."

Brandy E. Fisher

Excellence in Environmental Research



Environmental Health Perspectives publishes monographs on important environmental health topics and an annual review issue as supplements to the monthly journal. The February supplement (Volume 107, Supplement 1), Reviews in Environmental Health, 1999, explores topics in cellular mechanisms and environmentally induced diseases, cholinesterase and acetylcholine in neural development, current questions in toxicology, nonionizing radiation and cancer, the regional impact of global warming in the United States, drinking water safety, and geographic exposure modeling.

For subscription information, visit us online at http://ehis.niehs.nih.gov For advertising information, call 919-541-5466 or e-mail surak@niehs.nih.gov